

WO 2005/049835

PCT/AU2004/001633

80789771 - agriculture victoria.ST25  
SEQUENCE LISTING

<110> Agriculture Victoria Services Pty Ltd  
Australian Centre for Plant Functional Genomics Pty Ltd

<120> Modification of plant response to freezing and low temperature stress

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<151> 2003-11-24

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<170> PatentIn version 3.2

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&lt;213&gt; Deschampsia antarctica

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Gly Thr Asn Asn Ser Val Arg Phe Gly Arg Asn Asn Ala Leu Ala Gly  
 115 120 125

Asn Asp Asn Thr Val Ile Ser Gly Asn Asn Asn Thr Val Ser Gly Ser  
 130 135 140

Phe Asn Thr Val Val Ile Gly Ser Asp Asn Ile Ile Thr Gly Ser Lys  
 145 150 155 160

His Val Val Ser Gly Arg Lys His Ile Val Thr Asp Asn Asn Asn Lys  
 165 170 175

Val Ser Gly Asn Asp Asn Asn Val Ser Gly Ser Phe His Thr Val Ser  
 180 185 190

Gly Ser His Asn Thr Val Ser Gly Ser Asn Asn Thr Val Ser Gly Ser  
 195 200 205

Asn His Val Val Ser Gly Ser Asn Lys Val Val Thr Gly Gly  
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&lt;210&gt; 18

&lt;211&gt; 449

&lt;212&gt; DNA

&lt;213&gt; Deschampsia antarctica

&lt;400&gt; 18

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 aataccgtat ctgggagcca caataccgta tctgggagcc acaataaccgt atctggaagc 240  
 aaccacatcg tatctgggaa caacaaagtc gtgacatgag gttaatgac tttagtggat 300  
 tgtttccatc ttcctaacg aagctcatgt tcatgtccaa gctaataagt gtacctcaca 360  
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 <212> DNA  
 <213> Deschampsia antarctica

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 aataccgtat ctgggagcca caataccgta tctgggagcc acaataaccgt atctggaagc 240  
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 <212> DNA  
 <213> Deschampsia antarctica

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 gccgtaacaa ggaaccacaa taccgtatcc gggagccata ataccgtacc tgggagccat 180  
 aataccgtat ctgggagcca caataccgta tctgggagcc acaataaccgt atctggaagc 240  
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 tgtttccatc ttcctaacg aagctcatgt tcatgtccaa gctaataagt gtacctcaca 360  
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 ttaaataaaa ctcccttaaa aaacaaaaa 449

<210> 21  
 <211> 449  
 <212> DNA  
 <213> Deschampsia antarctica

<400> 21  
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 <212> PRT  
 <213> Deschampsia antarctica

<400> 22

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 35 40 45  
 Val Ser Gly Ser His Asn Thr Val Pro Gly Ser His Asn Thr Val Ser  
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<210> 23  
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 <212> DNA  
 <213> Deschampsia antarctica

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 agctgacgaa gggcagcttg agtccatgcc acccacgaat ttcagtcgac agacaacacc 180  
 aaaaacaaag tttgaactgg gaggcacttg tgggccttgt ggtcacggac tagctagtag 240  
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 taccacagct gaatccatgg cgccgaaatg ctggctgcta ctgctcttct cggcgttcct 420  
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 <212> DNA  
 <213> Deschampsia antarctica

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<210> 25  
 <211> 498  
 <212> DNA  
 <213> Deschampsia antarctica

<400> 25  
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 tgtcgtgtct ggggaagaacc atatcgtaac cgacaacaac aacgccgtaa ccgggcacga 180  
 caataatgta tccgggagct tccataccgt atccgggaac cacaacacag tatctgggag 240  
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 aaaaaaaaaa aaaaaaaaaa 498

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<210> 26  
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 <212> DNA  
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 gtcgtgtctg ggaagaacca tatcgtaacc gacaacaaca acgccgtaac cgggcacgac 180  
 aataatgtat ccgggagctt ccataaccgta tccgggaacc acaacacagt atctgggagc 240  
 aataatactg tatcagggag caaccatgtc gtgtccggga gcaacaaagt cgtgacagga 300  
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 acaagttttg tgtagctcac aatcacttgg tgggaccaat cgcgatgtca tgtaacttca 420  
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 aaaaaaaaaa aaaaaaa 497

<210> 27  
 <211> 497  
 <212> DNA  
 <213> Deschampsia antarctica

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 gtcgtgtctg ggaagaacca tatcgtaacc gacaacaaca acgccgtaac cgggcacgac 180  
 aataatgtat ccgggagctt ccataaccgta tccgggaacc acaacacagt atctgggagc 240  
 aataatactg tatcagggag caaccatgtc gtgtccggga gcaacaaagt cgtgacagga 300  
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 aaaaaaaaaa aaaaaaa 497

<210> 28  
 <211> 599  
 <212> DNA  
 <213> Deschampsia antarctica

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 gggaacgaca acaccgtcat atctgggaac aggaacattg tgtctgggag ctacaacacc 180  
 gtcgtaactg ggagtataa taccataacc ggtagcaacc atgtcgtgtc tgggaagaac 240  
 catatcgtaa ccgacaacaa caacgccgta accgggcacg acaataatgt atccgggagc 300  
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 acaatcactt ggtgggacca atcgcgatgt catgtaactt catggatata gcatcctttt 540  
 cctaatttaa ataaagtttg ctttgtgtaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 599

<210> 29  
 <211> 599  
 <212> DNA  
 <213> Deschampsia antarctica

<400> 29  
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 gggaacgaca acaccgtcat atctgggaac aggaacattg tgtctgggag ctacaacacc 180  
 gtcgtaactg ggagtataaa taccataacc ggtagcaacc atgtcgtgtc tgggaagaac 240  
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<210> 30  
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 <212> DNA  
 <213> Deschampsia antarctica

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 agctgacgaa gggcagcttg agtccatgcc acccaggaat ttcagtcgac agacaacacc 180  
 aaaaacaaag tttgaactgg gaggcacttg tgggccttgt ggtcacggac tagctagtac 240  
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<210> 31  
 <211> 217  
 <212> PRT  
 <213> Deschampsia antarctica

<400> 31

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Gln Ser Phe Ala Gly Asn Leu Gly Ser Pro Gly Gly Val Leu Pro Arg  
 35 40 45

Ala Ala Trp Ser Gly Ala Ser Cys Cys Asp Trp Glu Gly Val Ser Cys  
 50 55 60

Asp Gly Ala Ser Gly Arg Val Thr Ala Leu Arg Leu Pro Thr Arg Gly  
 65 70 75 80

Leu Gly Ala Ser Leu Ala Gly Leu Thr Arg His Val Lys Gly Asn Arg  
 85 90 95

Arg Thr Leu Ala Val Gln Pro Asn Thr Ile Thr Gly Thr Asn Asn Asn  
 100 105 110

Val Arg Ser Gly Ser Asn Asn Val Val Ser Gly Asn Asp Asn Thr Val  
 115 120 125

Ile Ser Gly Asn Arg Asn Ile Val Ser Gly Ser Tyr Asn Thr Val Val  
 130 135 140

Thr Gly Ser Asp Asn Thr Ile Thr Gly Ser Asn His Val Val Ser Gly  
 145 150 155 160

Lys Asn His Ile Val Thr Asp Asn Asn Asn Ala Val Thr Gly His Asp  
 165 170 175

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 Asn Asn Val Ser Gly Ser Phe His Thr Val Ser Gly Asn His Asn Thr  
 180 185 190

Val Ser Gly Ser Asn Asn Thr Val Ser Gly Ser Asn His Val Val Ser  
 195 200 205

Gly Ser Asn Lys Val Val Thr Gly Gly  
 210 215

<210> 32  
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 <212> DNA  
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 <211> 878  
 <212> DNA  
 <213> Deschampsia antarctica

<400> 33  
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 <212> DNA  
 <213> Deschampsia antarctica

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 <212> DNA  
 <213> Deschampsia antarctica

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acaatgacgt atcaggtaac gataataatg tatccggtag ctttcatacc gtatctggga	420
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 aaaatgtctt acaaaaaaaaa aaaaaaa 687

<210> 36  
 <211> 687  
 <212> DNA  
 <213> Deschampsia antarctica

<400> 36  
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 <213> Deschampsia antarctica

<400> 37  
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 <211> 223  
 <212> PRT  
 <213> Deschampsia antarctica

<400> 38

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Gly Phe Ala Gly Asn Leu Ser Gly Gly Gly Val Leu Leu Arg Ser Val  
 35 40 45

Trp Ser Gly Asp Ser Cys Cys Gly Trp Glu Gly Val Gly Cys Asp Ser  
 50 55 60

Ala Ser Gly Arg Val Thr Ala Met Leu Leu Pro Arg His Gly Leu Ala  
 65 70 75 80

Lys Pro Val Pro Gly Ala Ser Leu Ala Ser Leu Ala Arg Leu Glu Glu  
 85 90 95

Leu Phe Lys Arg Asn Arg Arg Thr Leu Glu Glu Gln Pro Asn Thr Ile  
 100 105 110

Gln Gly Thr Asn Asn Asn Val Arg Asp Gly Cys Tyr Asn Ala Leu Ser  
 115 120 125

Gly Asn Asp Asn Thr Val Ile Ser Gly Asn Asn Asn Thr Val Ser Gly  
 130 135 140

Ser Phe Asn Thr Ile Val Thr Gly Cys His Asn Thr Val Ser Gly Ser  
 145 150 155 160

Asn Gln Val Val Ser Gly Leu Asn His Ile Val Thr Asp Asp Asn Asn  
 165 170 175

Asp Val Ser Gly Asn Asp Asn Asn Val Ser Gly Ser Phe His Thr Val  
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180

185

190

Ser Gly Ser His Asn Thr Val Ser Gly Ser Asn Asn Thr Val Ser Gly  
 195 200 205

Arg Asn His Val Val Thr Gly Ser Asn Lys Val Val Thr Gly Gly  
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<210> 39  
 <211> 751  
 <212> DNA  
 <213> Deschampsia antarctica

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 <213> Deschampsia antarctica

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 <212> DNA  
 <213> Deschampsia antarctica

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 gggagtaaca aagtcgtgac aggagggtta tgatcagtga gtggatt 707

<210> 42  
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 <212> DNA  
 <213> Deschampsia antarctica

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<210> 43  
 <211> 708  
 <212> DNA  
 <213> Deschampsia antarctica

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 gagccacaat accgtatctg ggagcaacaa taccgtatct gggagaaacc atgtcgtaac 660  
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<210> 44  
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 <212> DNA  
 <213> Deschampsia antarctica

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 gagccacaat accgtatctg ggagcaacaa taccgtatct gggagaaacc atgtcgtaac 660  
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<210> 45

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&lt;211&gt; 832

&lt;212&gt; DNA

&lt;213&gt; Deschampsia antarctica

&lt;400&gt; 45

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tactcttgcc tgcggcgtgc gcaacatcgt gccaccccg tgacctccac gcgctacggg      240
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cgtgctgcgg ctgggaaggt gtgggctgcg acgacgcaag cggccgggtc acgacgatgt      360
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&lt;210&gt; 46

&lt;211&gt; 223

&lt;212&gt; PRT

&lt;213&gt; Deschampsia antarctica

&lt;400&gt; 46

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Met Ala Asn Cys Cys Leu Leu Leu Phe Leu Ala Leu Leu Leu Pro
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Ala Ala Cys Ala Thr Ser Cys His Pro Asp Asp Leu His Ala Leu Arg
20     25     30

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Gly Phe Ala Gly Asn Leu Ser Gly Gly Gly Val Leu Pro Arg Ser Val
35     40     45

```

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Trp Ser Gly Asp Ser Cys Cys Gly Trp Glu Gly Val Gly Cys Asp Asp
50     55     60

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Ala Ser Gly Arg Val Thr Thr Met Trp Leu Pro Arg Arg Gly Leu Val
65     70     75     80

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```

Lys Pro Val Pro Gly Ala Ser Leu Ala Gly Val Thr Glu Leu Glu Glu
85     90     95

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Leu Ile Thr Arg Asn Arg Arg Ala Leu Glu Glu Gln Pro Asn Thr Ile
100    105    110

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Gln Gly Thr Asn Asn Asn Val Arg Asp Gly Cys Tyr Asn Ala Leu Ser  
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130 135 140

Ser Phe Asn Thr Ile Val Thr Gly Cys His Asn Thr Val Ser Gly Ser  
145 150 155 160

Asn Gln Val Val Ser Gly Leu Asn His Ile Val Thr Asp Asp Asn Asn  
165 170 175

Asp Val Ser Gly Asn Asp Asn Asn Val Ser Gly Ser Phe His Thr Val  
180 185 190

Ser Gly Ser His Asn Thr Val Ser Gly Ser Asn Asn Thr Val Ser Gly  
195 200 205

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210 215 220

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<212> DNA  
<213> Deschampsia antarctica

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<210> 48  
<211> 810  
<212> DNA  
<213> Deschampsia antarctica



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<210> 49  
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 <212> DNA  
 <213> Deschampsia antarctica

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<210> 50  
 <211> 810

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&lt;212&gt; DNA

&lt;213&gt; Deschampsia antarctica

&lt;400&gt; 50

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attatgtaac ttcattgata tagcatcctt tttctgtttt aaataaaaac ccctaaacta      780
tcttacaaaa aaaaaaaaaa aaaaaaaaaa      810

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&lt;210&gt; 51

&lt;211&gt; 810

&lt;212&gt; DNA

&lt;213&gt; Deschampsia antarctica

&lt;400&gt; 51

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 <212> DNA  
 <213> Deschampsia antarctica

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 <212> PRT  
 <213> Deschampsia antarctica

<400> 54

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Asp Leu Ser His Asn Ser Leu Asp Gly Glu Val Pro Lys Ser Leu Gln  
 50 55 60

Ile Arg Leu Arg Ala Leu Thr Thr Thr Gly Arg Ser Leu Gly Met Val  
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Phe Ile Asn Met Pro Leu His Met Lys Arg Ser Arg Arg Thr Leu Gln  
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 100 105 110

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 130 135 140

Asn Val Val Ser Gly Ser Asn His Val Val Ser Arg Thr Asn His Val  
 145 150 155 160

Val Thr Asp Asn Asn Asn Ala Val Thr Gly Asn His Asn Thr Val Ser  
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Asn His Val Val Ser Gly Ser Asn Lys Val Val Thr Gly Gly  
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 <212> DNA  
 <213> Lolium perenne

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 <213> *Lolium perenne*

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 <212> DNA  
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 <213> *Lolium perenne*

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&lt;212&gt; DNA

<213> *Lolium perenne*

&lt;400&gt; 61

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caataaccgg gacc                                     554

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&lt;210&gt; 62

&lt;211&gt; 568

&lt;212&gt; DNA

<213> *Lolium perenne*

&lt;400&gt; 62

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&lt;210&gt; 63

&lt;211&gt; 569

&lt;212&gt; DNA

<213> *Lolium perenne*

&lt;400&gt; 63

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gctgtagttg ggaaggtgtg ggatgcgacg gcggaagcgg ccgtgtcact acgttggtggc      240
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 <212> DNA  
 <213> Lolium perenne

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agaatttaca aataaggctc aggtgcctca acatcggttg tcgttcactg ggcattggctt	480
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caataaccgg gaccaataac tatgtca	567

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 <213> Lolium perenne

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&lt;212&gt; DNA

&lt;213&gt; Lolium perenne

&lt;400&gt; 66

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ccactaacat gacattgcag gtgaagcata accaaatagc actaagtggg caaccaaaca      540
caataaccgg gaccaataac tatgtcag                                     568

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&lt;210&gt; 67

&lt;211&gt; 568

&lt;212&gt; DNA

&lt;213&gt; Lolium perenne

&lt;400&gt; 67

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caataaccgg gaccaataac tatgtcag                                     568

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&lt;210&gt; 68

&lt;211&gt; 568

&lt;212&gt; DNA

&lt;213&gt; Lolium perenne

&lt;400&gt; 68

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 gtaacaacca tgtcgttaaca aggaaccaga atactgtatc tgggagccat cataaagtat 300  
 ctggaggcca caatactgta tctgggagcc acaataaccgt atctggaagc cacaacacag 360  
 tatctgggag caaccacatc gtacatggga acaacaaagt cgtgacagga ggtaacaat 420  
 ctatagagaa ttgtttccat attccctaac ggagttcacg tccttgtcca agctgggtgt 480  
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<210> 71  
 <211> 539  
 <212> DNA  
 <213> Lolium perenne

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 atgtcagatc tgggggtcaac aatgttggtt ctgggaacca caacactgtc acatccggga 180  
 acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg 240  
 gtaacaacca tgtcgttaaca aggaaccaga atactgtatc tgggagccat cataaagtat 300  
 ctggaggcca caatactgta tctgggagcc acaataccgt atctggaagc cacaacacag 360  
 tatctgggag caaccacatc gtacatggga acaacaaagt cgtgacagga ggtaacaat 420  
 ctatagagaa ttgtttccat attccctaac ggagttcacg tccttgtcca agctgggtgt 480  
 agctaaatat cacttggtgg ggccaatggc gttatgtaac ttcgtggata tagcatcac 539

<210> 72  
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 <213> Lolium perenne

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 atgtcagatc tgggggtcaac aatgttggtt ctgggaacca caacactgtc acatccggga 180  
 acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg 240  
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 ctggaggcca caatactgta tctgggagcc acaataccgt atctggaagc cacaacacag 360  
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 ctatagagaa ttgtttccat attccctaac ggagttcacg tccttgtcca agctgggtgt 480  
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<210> 73  
 <211> 539  
 <212> DNA  
 <213> Lolium perenne

<400> 73  
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 atgtcagatc tgggggtcaac aatgttggtt ctgggaacca caacactgtc acatccggga 180  
 acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg 240  
 gtaacaacca tgtcgttaaca aggaaccaga atactgtatc tgggagccat cataaagtat 300  
 ctggaggcca caatactgta tctgggagcc acaataccgt atctggaagc cacaacacag 360  
 tatctgggag caaccacatc gtacatggga acaacaaagt cgtgacagga ggtaacaat 420  
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<210> 74  
 <211> 539  
 <212> DNA  
 <213> Lolium perenne

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 atgtcagatc tggggtaac aatgttggtt ctgggaacca caacactgtc acatccggga 180  
 acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg 240  
 gtaacaacca tgtcgtaaca aggaaccaga atactgtatc tgggagccat cataaagtat 300  
 ctggaggcca caatactgta tctgggagcc acaataccgt atctggaagc cacaacacag 360  
 tatctgggag caaccacatc gtacatggga acaacaaagt cgtgacagga ggtaacaat 420  
 ctatagagaa ttgtttccat attccctaac ggagttcacg tccttggtcca agctgggtgt 480  
 agctaaatat cacttggtgg ggccaatggc gttatgtaac ttcgtggata tagcatcac 539

<210> 75  
 <211> 323  
 <212> DNA  
 <213> Lolium perenne

<400> 75  
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 tgaagcataa ccaaatagca ctaagtgggc aaccaaacac aataaccggg accaataact 120  
 atgtcagatc tggggtaac aatgttggtt ctgggaacca caacactgtc acatccggga 180  
 acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg 240  
 gtaacaacca tgtcgtaaca aggaaccaga atactgtatc tgggagccat cataaagtat 300  
 ctggaggcca caatactgta tct 323

<210> 76  
 <211> 539  
 <212> DNA  
 <213> Lolium perenne

<400> 76  
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 atgtcagatc tggggtaac aatgttggtt ctgggaacca caacactgtc acatccggga 180  
 acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg 240  
 gtaacaacca tgtcgtaaca aggaaccaga atactgtatc tgggagccat cataaagtat 300  
 ctggaggcca caatactgta tctgggagcc acaataccgt atctggaagc cacaacacag 360  
 tatctgggag caaccacatc gtacatggga acaacaaagt cgtgacagga ggtaacaat 420  
 ctatagagaa ttgtttccat attccctaac ggagttcacg tccttggtcca agctgggtgt 480

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 agctaaatat cacttggtgg ggccaatggc gttatgtaac ttcgtggata tagcatcac 539

<210> 77  
 <211> 539  
 <212> DNA  
 <213> Lolium perenne

<400> 77  
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 tgaagcataa ccaaatagca ctaagtgggc aaccaaacac aataaccggg accaataact 120  
 atgtcagatc tgggggtcaac aatgttggtt ctgggaacca caacactgtc acatccggga 180  
 acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg 240  
 gtaacaacca tgtcgttaaca aggaaccaga atactgtatc tgggagccat cataaagtat 300  
 ctggaggcca caatactgta tctgggagcc acaataccgt atctggaagc cacaacacag 360  
 tatctgggag caaccacatc gtacatggga acaacaaagt cgtgacagga ggtaacaat 420  
 ctatagagaa ttgtttccat attccctaac ggagttcacg tccttggtcca agctgggtgt 480  
 agctaaatat cacttggtgg ggccaatggc gttatgtaac ttcgtggata tagcatcac 539

<210> 78  
 <211> 482  
 <212> DNA  
 <213> Lolium perenne

<400> 78  
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 atgtcagatc tgggggtcaac aatgttggtt ctgggaacca caacactgtc acatccggga 180  
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 gtaacaacca tgtcgttaaca aggaaccaga atactgtatc tgggagccat cataaagtat 300  
 ctggaggcca caatactgta tctgggagcc acaataccgt atctggaagc cacaacacag 360  
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<210> 79  
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 <212> DNA  
 <213> Lolium perenne

<400> 79  
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 atgtcagatc tgggggtcaac aatgttggtt ctgggaacca caacactgtc acatccggga 180  
 acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg 240  
 gtaacaacca tgtcgttaaca aggaaccaga atactgtatc tgggagccat cataaagtat 300

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ctggaggcca caatactgta tctgggagcc acaataccgt atctggaagc cacaacacag	360
tatctgggag caaccacatc gtacatggga acaacaaagt cgtgacagga ggtaacaat	420
ctatagagaa ttgtttccat attccctaac ggagttcacg tccttgcca agctgggtgt	480
agctaaatat cacttggtgg ggccaatggc gttatgtaac ttcgtggata tagcatcac	539

<210> 80  
 <211> 539  
 <212> DNA  
 <213> Lolium perenne

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atgtcagatc tgggggtcaac aatgttggtt ctgggaacca caaactgtc acatccggga	180
acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg	240
gtaacaacca tgtcgtaca aggaaccaga atactgtatc tgggagccat cataaagtat	300
ctggaggcca caatactgta tctgggagcc acaataccgt atctggaagc cacaacacag	360
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agctaaatat cacttggtgg ggccaatggc gttatgtaac ttcgtggata tagcatcac	539

<210> 81  
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 <212> DNA  
 <213> Lolium perenne

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atgtcagatc tgggggtcaac aatgttggtt ctgggaacca caaactgtc acatccggga	180
acaacaatgt tgtgtctgga aaccacaaca ccgtgtct	218

<210> 82  
 <211> 539  
 <212> DNA  
 <213> Lolium perenne

<400> 82 ggtgcctcaa catcgttggt cgttcactgg gcatggcttc cactaacatg acattgcagg	60
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atgtcagatc tgggggtcaac aatgttggtt ctgggaacca caaactgtc acatccggga	180
acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg	240
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ctggaggcca caatactgta tctgggagcc acaataccgt atctggaagc cacaacacag	360

WO 20

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 agctaaatat ggccaatggc gttatgtaac ttcgtggata tagcatcac 539

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<400> 83  
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 atgtcagatc tggc aatgttgttt ctgggaacca caacactgtc acatccggga 180  
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 gtaacaacca tgt aaggaaccaga atactgtatc tgggagccat cataaagtat 300  
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 agctaaatat cacttg ggccaatggc gttatgtaac ttcgtggata tagcatcac 539

<210> 84  
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 <213> Lolium perenne

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 agctaaatat cacttgggtg ggccaatggc gttatgtaac ttcgtggata tagcatcac 539

<210> 85  
 <211> 539  
 <212> DNA  
 <213> Lolium perenne

<400> 85  
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 atgtcagatc tggggtaac aatgttgttt ctgggaacca caacactgtc acatccggga 180



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acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg	240
gtaacaacca tgtcgttaaca aggaaccaga atactgtatc tgggagccat cataaagtat	300
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agctaaatat cacttggtgg ggccaatggc gttatgtaac ttcgtggata tagcatcac	539

<210> 86  
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 <212> DNA  
 <213> Lolium perenne

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atgtcagatc tgggggtcaac aatgttggtt ctgggaacca caacactgtc acatccggga	180
acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg	240
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<210> 87  
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 <212> DNA  
 <213> Lolium perenne

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atgtcagatc tgggggtcaac aatgttggtt ctgggaacca caacactgtc acatccggga	180
acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg	240
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<210> 88  
 <211> 539  
 <212> DNA  
 <213> Lolium perenne

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<400> 88  
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<210> 89  
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 <212> DNA  
 <213> *Lolium perenne*

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 tatctgggag caaccacatc gtacatggga acaacaaagt cgtgacagga ggtaacaat 420  
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<210> 90  
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 <212> DNA  
 <213> *Lolium perenne*

<400> 90  
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<210> 91  
<211> 539  
<212> DNA  
<213> Lolium perenne

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gtaacaacca tgtcgttaaca aggaaccaga atactgtatc tgggagccat cataaagtat 300  
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ctatagagaa ttgtttccat attccctaac ggagttcacg tccttgcca agctgggtgt 480  
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<210> 92  
<211> 539  
<212> DNA  
<213> Lolium perenne

<400> 92  
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atgtcagatc tgggggtcaac aatgttggtt ctgggaacca caaactgtc acatccggga 180  
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gtaacaacca tgtcgttaaca aggaaccaga atactgtatc tgggagccat cataaagtat 300  
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<210> 93  
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<212> DNA  
<213> Lolium perenne

<400> 93  
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tgaagcataa ccaaataagca ctaagtgggc aaccaaacac aataaccggg accaataact 120  
atgtcagatc tgggggtcaac aatgttggtt ctgggaacca caaactgtc acatccggga 180  
acaacaatgt tgtgtctgga aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg 240  
gtaacaacca tgtcgttaaca aggaaccaga atactgtatc tgggagccat cataaagtat 300

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ctggaggcca caatactgta tctgggagcc acaataccgt atctggaagc cacaacacag 360  
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 ctatagagaa ttgtttccat attccctaac ggagttcacg tccttggtcca agctgggtgt 480  
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 <213> Lolium perenne

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 atagagaatt gtttccatat tccctaacgg agttcacgct cttgtccaag ctgggtgtag 480  
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 tagagaattg tttccatatt ccctaacgga gttcacgtcc ttgtccaagc tgggtgtagc 480  
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<210> 96  
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 <213> Lolium perenne

<400> 96  
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gaattgtttc catattccct aacggagttc acgtccttgt ccaagctggg tgtagctaaa	480
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<210> 97  
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 <213> Lolium perenne

<400> 97

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 <212> DNA  
 <213> Lolium perenne

<400> 98

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gaattgtttc catattccct aacggagttc acgtccttgt ccaagctggg tgtagctaaa	480
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<210> 99

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 <213> Lolium perenne

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 ggtcaacaat gttgtttctg ggaaccacaa cactgtcaca tccgggaaca acaatgttgt 180  
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 <211> 399  
 <212> DNA  
 <213> Lolium perenne

<400> 100  
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 gtacatggga acaacaaagt cgtgacagga ggtaacaat ctatagagaa ttgtttccat 300  
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 <212> DNA  
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<400> 101  
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 <212> PRT  
 <213> Lolium perenne

<400> 102

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Arg Gly Phe Ala Gly Asn Leu Ser Asn Gly Gly Val Leu Leu His Ala  
35 40 45

Lys Trp Pro Asp Asn Ser Cys Cys Ser Trp Glu Gly Val Gly Cys Asp  
50 55 60

Gly Gly Ser Gly Arg Val Thr Thr Leu Trp Leu Pro Gly His Gly Leu  
65 70 75 80

Ala Gly His Ile Pro Thr Ala Ser Leu Ala Gly Leu Ala Arg Leu Glu  
85 90 95

Ser Leu Asn Leu Ala Asn Asn Lys Leu Val Gly Thr Ile Pro Ser Trp  
100 105 110

Ile Gly Val Leu Asp His Leu Cys Tyr Leu Asp Leu Ser Asn Asn Ser

115 80789771 - agriculture victoria.ST25  
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 130 135 140  
 Asn Ile Val Gly Arg Ser Leu Gly Met Ala Ser Thr Asn Met Thr Leu  
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 Gln Val Lys His Asn Gln Ile Ala Leu Ser Gly Gln Pro Asn Thr Ile  
 165 170 175  
 Thr Gly Thr Asn Asn Tyr Val Arg Ser Gly Val Asn Asn Val Val Ser  
 180 185 190  
 Gly Asn His Asn Thr Val Thr Ser Gly Asn Asn Asn Val Val Ser Gly  
 195 200 205  
 Asn His Asn Thr Val Ser Gly Thr Asn His Val Val Thr Gly Asn Asn  
 210 215 220  
 His Val Val Thr Arg Asn Gln Asn Thr Val Ser Gly Ser His His Lys  
 225 230 235 240  
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 <212> DNA  
 <213> *Lolium perenne*

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 caataaccgg gaccaataac tatgtcag 568



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<210> 104  
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 <213> *Lolium perenne*

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<210> 108  
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<210> 109  
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 <213> Lolium perenne

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<210> 113  
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 <212> DNA  
 <213> *Lolium perenne*

<400> 113						
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tccgtgggca	tggaactcgca	ggccacatcc	caacagcatc	cttggctggc	cttgacggc	300
tggaactcgct	caacctcgcc	aacaacaaac	tggtcggcac	aatcccatca	tggaatgggtg	360
tgcttgacca	cctttgctac	ttggatctct	caaataattc	attggttggg	gagataacca	420
agaatttaca	gagaaggctc	agttgcccc	acattattgg	tcatttactg	ggtacggctt	480
ccactaacat	gccattgcag	gtgaagcata	accaaatagc	actgagtggg	caaccaaaca	540
caataaccgg	gaccaataac	tatgtcaga				569

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<210> 114  
 <211> 552  
 <212> DNA  
 <213> *Lolium perenne*

<400> 114  
 aatggaggaa agttggttct tgctcctttt cttggcggtc ctcttgccgg cggcgagcgt 60  
 ggcggtggcg tgccaccctg atgacctcct tgcactgcgc gggttcgccg gtaatctcag 120  
 caatgggggc gtcctcctcc atgccaagtg gtccggcaac tcttgctgta gttgggaagg 180  
 tgtgggatgc gacggcggaa gcgcccggtg cactacgttg tggctccctg ggcatggact 240  
 cgcaggccac atcccaacag catccttggc tggccttgca cggctggagt cgctcaacct 300  
 cgccaacaac aaactgggtcgc gcacaatccc atcttggtatt ggtgtgcttg accacctttg 360  
 ctacttggtat ctctcaaata attcattggt tggtagagata cccaagaatt tacagagaag 420  
 gctcagttgc cccaacattg ttggtcattc actgggtacg gcttccacta acatgccatt 480  
 gcaggtgaag cataaccaa tagcactgag tgggcaacca aacacaataa ccgggaccaa 540  
 taactatgtc ag 552

<210> 115  
 <211> 536  
 <212> DNA  
 <213> *Lolium perenne*

<400> 115  
 ttcttgctcc ttttcttgac gttcctcctg ccggcggcga gcgtggcggg gtcgtgccac 60  
 cctgatgacc tccttgact gcgcgggttc gccggtaatc tcagcaatgg gggcgctcctc 120  
 ctccatgcca agtggttcgg caactcttgc tgtagttggg aagggtgtggg atgcgacggc 180  
 ggaagcggcc gtgtcactac tttatggctc cgtgggcatg gactcgcagg ccacatccca 240  
 acagcatcct tggctggcct tgcacggctg gagtcgtca acctcgccaa caacaaactg 300  
 gtcggcaciaa tcccatcatg gatgggtgtg cttgaccacc tttgctactt ggatctctca 360  
 aataattcat tggttggtga gatacccaag aatttacaga gaaggctcag ttgccccaac 420  
 attattggtc attcactggg tacggcttcc actaacatgc cattgcaggt gaagcataac 480  
 caaatagcac tgagtgggca accaaacaca ataaccggga ccaataacta tgtcag 536

<210> 116  
 <211> 488  
 <212> DNA  
 <213> *Lolium perenne*

<400> 116  
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 gttcgccggg aatctcagca atggggcggt cctcctccat gccagtggt tcggcaactc 120  
 ttgctgtagt tgggaagggt tgggatgcga cggcggaagc ggccgtgtca ctactttatg 180  
 gcttcgtggg catggactcg caggccacat cccaacagca tccttggtg gccttgcacg 240  
 gctggagtcg ctcaacctcg ccaacaacaa actggtcggc acaatcccat catggatggg 300

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 tgtgcttgac cacctttgct acttggatct ctcaaataat tcattgggtg gtgagatacc 360  
 caagaattta cagagaaggc tcagttgccc caacattgtt ggtcattcac tgggtacggc 420  
 ttccactaac atgccattgc aggtgaagca taaccaaata gactgagtg ggcaaccaa 480  
 cacaataa 488

<210> 117  
 <211> 494  
 <212> DNA  
 <213> Lolium perenne

<400> 117  
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 agcaatgggg gcgtcctcct ccatgccaaag tggttcggca actcttgctg tagttgggaa 120  
 ggtgtgggat gcgacggcgg aagcggccgt gtcactactt tatggcttcg tgggcatgga 180  
 ctcgcaggcc acatcccaac agcatccttg gctggccttg cacggctgga gtcgctcaac 240  
 ctcgccaaca acaaactggt cggcacaatc ccatcatgga tgggtgtgct tgaccacctt 300  
 tgctacttgg atctctcaaa taattcattg gttgggtgaga tacccaagaa ttacagaga 360  
 aggctcagtt gccccaacat tgttggatcat tctactgggta cggcttcac taacatgcca 420  
 ttgcaggtga agcataacca aatagcactg agtgggcaac caaacacaat aaccgggacc 480  
 aataactatg tcag 494

<210> 118  
 <211> 539  
 <212> DNA  
 <213> Lolium perenne

<400> 118  
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 tgaagcataa ccaaatagca ctgagtgggc aaccaaacac aataaccggg accaataact 120  
 atgtcagatc tggggtaaac aatgttgttt ctgggaacca caacactgtc acatccggga 180  
 acaacaatgt tgtgtctggg aaccacaaca ccgtgtctgg gaccaaccat gttgtaactg 240  
 gtaacaacca tgtcgttaaca aggaaccaga ataccgtatc tgggagccat cataaagtat 300  
 ctggaggcca caatactgta tctgggagcc acaataccgt atctggaagc cacaacacag 360  
 tatctgggag caaccacgtc gtacacggga acaacaaagt cgtgacagga ggtaacaat 420  
 ctatagagaa ttgtttccat attccctaac ggagttcacg tccttgcca agctgggtgt 480  
 agctaaatat cacttgggtg ggccaatggc gttatgtaac ttcgtggata tagcatcac 539

<210> 119  
 <211> 980  
 <212> DNA  
 <213> Lolium perenne

<400> 119  
 cttacatagc tgaaccaatg gagaaaagtt ggttcttgct ctttttcttg acgttctctc 60  
 tgccggcggc gagcgtggcg gtgtcgtgcc accctgatga cctccttgca ctgcgagggt 120

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tcgccggtaa tctcagcaat gggggcgctc tcctccatgc caagtgggtc ggcaactctt 180
gctgtagttg ggaaggtgtg ggatgacgac gcggaagcgg ccgtgtcact actttatggc 240
tccgtgggca tggactcgca ggccacatcc caacagcatc cttggctggc cttgcacggc 300
tggagtcgct caacctcgcc aacaacaaac tggtcggcac aatcccatca tggatgggtg 360
tgcttgacca cctttgctac ttggatctct caaataattc attggttggg gagataccca 420
agaatttaca gagaaggctc agttgcccc aattgttgg tcattcactg ggtacggctt 480
ccactaacat gccattgcag gtgaagcata accaaatagc actgagtggg caaccaaaaca 540
caataaccgg gaccaataac tatgtcagat ctgggggtcaa caatgttgtt tctgggaacc 600
acaacactgt cacatccggg aacaacaatg ttgtgtctgg gaaccacaac accgtgtctg 660
ggaccaacca tgttctaact ggtaacaacc atgtcgtaac aaggaaccag aataccgtat 720
ctgggagcca tcataaagta tctggaggcc acaatactgt atctgggagc cacaataccg 780
tatctggaag ccacaacaca gtatctggga gcaaccacgt cgtacacggg aacaacaaag 840
tcgtgacagg aggttaacaa tctatagaga attgtttcca tattccctaa cggagttcac 900
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cttcgtggat atagcatcac 980

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<210> 120  
 <211> 279  
 <212> PRT  
 <213> Lolium perenne

<400> 120

Met Glu Lys Ser Trp Phe Leu Leu Leu Phe Leu Thr Phe Leu Leu Pro  
 1 5 10 15

Ala Ala Ser Val Ala Val Ser Cys His Pro Asp Asp Leu Leu Ala Leu  
 20 25 30

Arg Gly Phe Ala Gly Asn Leu Ser Asn Gly Gly Val Leu Leu His Ala  
 35 40 45

Lys Trp Phe Gly Asn Ser Cys Cys Ser Trp Glu Gly Val Gly Cys Asp  
 50 55 60

Gly Gly Ser Gly Arg Val Thr Thr Leu Trp Leu Arg Gly His Gly Leu  
 65 70 75 80

Ala Gly His Ile Pro Thr Ala Ser Leu Ala Gly Leu Ala Arg Leu Glu  
 85 90 95

Ser Leu Asn Leu Ala Asn Asn Lys Leu Val Gly Thr Ile Pro Ser Trp  
 100 105 110

Met Gly Val Leu Asp His Leu Cys Tyr Leu Asp Leu Ser Asn Asn Ser  
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115 80789771 - agriculture victoria.ST25  
 120 125  
 Leu Val Gly Glu Ile Pro Lys Asn Leu Gln Arg Arg Leu Ser Cys Pro  
 130 135 140  
 Asn Ile Val Gly His Ser Leu Gly Thr Ala Ser Thr Asn Met Pro Leu  
 145 150 155 160  
 Gln Val Lys His Asn Gln Ile Ala Leu Ser Gly Gln Pro Asn Thr Ile  
 165 170 175  
 Thr Gly Thr Asn Asn Tyr Val Arg Ser Gly Val Asn Asn Val Val Ser  
 180 185 190  
 Gly Asn His Asn Thr Val Thr Ser Gly Asn Asn Asn Val Val Ser Gly  
 195 200 205  
 Asn His Asn Thr Val Ser Gly Thr Asn His Val Val Thr Gly Asn Asn  
 210 215 220  
 His Val Val Thr Arg Asn Gln Asn Thr Val Ser Gly Ser His His Lys  
 225 230 235 240  
 Val Ser Gly Gly His Asn Thr Val Ser Gly Ser His Asn Thr Val Ser  
 245 250 255  
 Gly Ser His Asn Thr Val Ser Gly Ser Asn His Val Val His Gly Asn  
 260 265 270  
 Asn Lys Val Val Thr Gly Gly  
 275

<210> 121  
 <211> 472  
 <212> DNA  
 <213> Deschampsia antarctica

<400> 121  
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 catatagggtt ggtgacgttt attttgaagt ctgcgtaata aaatcttcct aggatatttg 120  
 catggtatca ctcaattatt actctgagta ggcattgggtg acaagtacct ctccagcaca 180  
 gctccaatcc tacatgtggt agctgacaac aagcagcttg agtgcttgcc acccacgaat 240  
 tccagtcgac agaaaacacc aaaaaccaag cttgaattgg gaggcagttt gtgggccttg 300  
 tggtcacgga ctagtattag accacttgca atgcatgctt acaaacatac acgcacacta 360  
 taagtaagat gtaccacca agcagttttt aacaacaacg cttgtgaatc acttccattc 420  
 caaaaagggtt tcttgccgaa tccatatata gcataccacg gctgaatcca tg 472

<210> 122  
 <211> 1404



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&lt;212&gt; DNA

&lt;213&gt; Deschampsia antarctica

&lt;400&gt; 122

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ccttggttcga ctccgtctca agggccttga acctcctcgc agactcctct tcgagggcct      60
ggagtttttg ctctgagtcg ttggagcggc gcaaagcgtc atctctttcg gctacaaaat      120
aaagaatggtt acaagtgcct gcaagggaaa ttcattggaag gatcttaaaag atagtgcctat      180
acccggaagt cgagctcgct ctactagcag ggagccatga tcagcttcaa ccttcgcgaa      240
tctacgcgcc atgtccatta gctggcaaga aagaggctgc acagaaataa ttattcttag      300
tatcccgctg tgccagaata ggctcggggg ctacattagg ataaaaaga taagggtgcg      360
gaacttacgt tttctatgcg aggaggaggt gaaggctctg gagtcgaagt tttctcctcc      420
cgcattgattg tcttctcagg tgaagacttc aaagcttcac catggtccac caacctccgc      480
gcttcattcag cggaagtggc tgcgactcc atacccttc tcgggggttt agctaagtca      540
tcttcccctt cggatctggt gtttatattt gtatgtgtgg ttttattttt caaagctgat      600
acgatggttg ctaaataata caggctacaa ataggatata ctttctcta ctctcccgct      660
tattaatctt catatgtatg tgtgcatgta tgatgtatca aagtagagca tgcattgggc      720
ttgtgcaccc cttggtagcc tcgatgacct tgacctgtg ttgtttggtg gcatcgaatc      780
gattgcgaga aaatagtaag tttctcaatc tgatcagcca gacaccgaac atattatttg      840
gtaataaatg acggcgattc acaatttttc aataatcgtg tagaattagt tggcttaaca      900
aaagtcggca cattaggccg gtcacgatgt gtcgtctcat ccgagaaatt ccatgtcaac      960
cacatcgtct aggttcgtat cgtttatttt gacgtctgca taataagatc ttcctaggat     1020
attttgttcc tctgcgtgca ctggaactgt aggcgcgcgg tatcactcac ttgttactct     1080
gccaaaggcat gggtgacaag tacctctcca gtcagttcc aaccctatat gcggtagctg     1140
acgaagggca gcttgagtcg atgccacca cgaatttcag tcgacagaca acacaaaaa     1200
ccaagtttga attgggaggc acctgtgggc cttgtgggtc cggactagct agtactgaac     1260
cacttgcgac acatgcttac acacacacac acacacacta taagtagcat gtaccacca     1320
agtagttttt aacaacaaca cttgcgaatc acttgcatc caaaaaagtt cattcctgag     1380
ttgcatacca cagctgaatc catg                                     1404

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&lt;210&gt; 123

&lt;211&gt; 420

&lt;212&gt; DNA

&lt;213&gt; Lolium perenne

&lt;400&gt; 123

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aaaaggttta cgaaatagtt gttattaaac tatatatggt catgtaacta tatttcaata      60
taattatttg tattacagca gaaaatcatt atttctatta ctttgatta ttattttggt      120
ttgagtgttg taaaattggg aattacaact atactatttt cgtatgggaa caatttggtt      180
atttttgtgt ctctctttct cttcatagct agctgacagc gagaacaaaa accaagatct      240
aattgtggaa gtagactagt agtcgaccac ccatgcatgc ttacataaga aaacacacgc      300

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actataagat tggatgcacc acccaagcac tataaaaagg atgcaccacc taagcaattt 360  
 ttgccaacag cgcgcaacttg ttgcatcca aaaagaaaat cttacatagc tgaaccaatg 420

<210> 124  
 <211> 118  
 <212> PRT  
 <213> Lolium perenne

<400> 124

Asp Glu Gln Pro Asn Thr Ile Ser Gly Ser Asn Asn Thr Val Arg Ser  
 1 5 10 15

Gly Ser Lys Asn Val Leu Ala Gly Asn Asp Asn Thr Val Ile Ser Gly  
 20 25 30

Asp Asn Asn Ser Val Ser Gly Ser Asn Asn Thr Val Val Ser Gly Asn  
 35 40 45

Asp Asn Thr Val Thr Gly Ser Asn His Val Val Ser Gly Thr Asn His  
 50 55 60

Ile Val Thr Asp Asn Asn Asn Asn Val Ser Gly Asn Asp Asn Asn Val  
 65 70 75 80

Ser Gly Ser Phe His Thr Val Ser Gly Gly His Asn Thr Val Ser Gly  
 85 90 95

Ser Asn Asn Thr Val Ser Gly Ser Asn His Val Val Ser Gly Ser Asn  
 100 105 110

Lys Val Val Thr Asp Ala  
 115

<210> 125  
 <211> 285  
 <212> PRT  
 <213> Triticum aestivum

<400> 125

Met Ala Lys Cys Gly Leu Leu Leu Leu Phe Leu Ala Phe Leu Leu Pro  
 1 5 10 15

Ala Ala Arg Ala Thr Ser Cys His Pro Asp Asp Leu Arg Ala Leu Arg  
 20 25 30

Gly Phe Ala Gly Asn Leu Ser Gly Gly Ala Ala Leu Leu Arg Ala Ala  
 35 40 45

Trp Ser Gly Ala Ser Cys Cys Val Trp Glu Gly Val Asn Cys Asp Gly  
 50 55 60

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 Thr Ser Gly Arg Val Thr Ala Leu Arg Leu Pro Gly His Gly Leu Val  
 65 70 75 80  
 Gly Leu Ile Pro Gly Ala Ser Leu Ala Gly Leu Ala Arg Leu Glu Glu  
 85 90 95  
 Leu Asn Leu Ala Asn Asn Lys Leu Val Gly Thr Ile Pro Ser Trp Ile  
 100 105 110  
 Gly Glu Leu Asp His Leu Cys Tyr Leu Asp Leu Ser Asp Asn Ser Leu  
 115 120 125  
 Val Gly Glu Val Pro Lys Ser Leu Ile Arg Leu Lys Gly Leu Val Ile  
 130 135 140  
 Ala Gly His Ser Leu Gly Met Val Phe Thr Asn Met Pro Leu Tyr Val  
 145 150 155 160  
 Lys Arg Asn Arg Arg Thr Leu Asp Glu Gln Pro Asn Thr Ile Ser Gly  
 165 170 175  
 Ser Asn Asn Thr Val Arg Ser Gly Ser Thr Asn Val Val Ser Gly Asn  
 180 185 190  
 Asp Asn Thr Val Ile Ser Gly Asn Asn Asn Asn Val Ala Gly Ser Asn  
 195 200 205  
 Asn Thr Val Ile Thr Gly Asn Asp Asn Thr Val Thr Gly Ser Asn His  
 210 215 220  
 Val Val Ser Gly Asp Lys His Ile Val Thr Asp Asn Asn Asn Ala Val  
 225 230 235 240  
 Ser Gly Asn Asp Asn Asn Val Ser Gly Ser Phe His Thr Val Ser Gly  
 245 250 255  
 Ser His Asn Thr Val Ser Gly Thr Asn Asn Thr Val Ser Gly Ser Asn  
 260 265 270  
 His Val Val Ser Gly Ser Asn Lys Val Val Gly Asp Glu  
 275 280 285

<210> 126  
 <211> 430  
 <212> PRT  
 <213> Hordeum vulgare

<400> 126

Met Ala Arg Cys Trp Leu Leu Leu Leu Leu Cys Ala Phe Leu Trp Pro  
 1 5 10 15

Ala Val Ser Ala Thr Pro Cys His His His Asp Leu His Ala Leu Arg  
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20

25

30

Gly Phe Ala Glu Glu Leu Gly Gly Gly Gly Ala Leu Leu Arg Thr Ala  
 35 40 45

Trp Ser Gly Ala Ser Cys Cys Asp Trp Glu Gly Val Gly Cys Asp Gly  
 50 55 60

Ala Thr Gly Arg Val Thr Ala Leu Arg Leu Pro Gly His Gly Leu Ala  
 65 70 75 80

Gly Pro Ile Pro Gly Ala Ser Leu Ala Gly Leu Val Trp Leu Glu Glu  
 85 90 95

Leu Phe Leu Gly Ser Asn Ser Phe Val Gly Val Leu Pro Asp Glu Leu  
 100 105 110

Phe Gly Leu Ala Arg Leu Arg Lys Leu Ser Leu Ala Ser Asn Glu Leu  
 115 120 125

Thr Gly Glu Leu Ser Pro Arg Leu Gly Glu Leu Thr Arg Leu Thr Ser  
 130 135 140

Leu Asp Leu Ser Asp Asn Arg Phe Ser Gly Arg Leu Pro Asp Val Phe  
 145 150 155 160

Asp Asp Leu Thr Ser Leu Glu His Leu Ala Ala His Ser Asn Asp Phe  
 165 170 175

Ser Gly Phe Leu Pro Pro Ser Leu Ala Ser Leu Ser Ser Leu Arg Glu  
 180 185 190

Leu Asn Leu Arg Asn Asn Ser Met Ser Gly Pro Ile Ala Arg Val Ser  
 195 200 205

Phe Ser Gly Met Pro Phe Leu Ser Ser Val Asp Phe Ser Thr Asn His  
 210 215 220

Leu Thr Gly Trp Leu Pro Thr Ser Leu Ala Ala Cys Gly Glu Leu Arg  
 225 230 235 240

Ser Leu Asn Leu Ala Asn Asn Thr Leu Val Gly Asn Ile Pro Ser Trp  
 245 250 255

Met Gly Glu Phe Asp Arg Leu Trp Tyr Leu Asp Leu Ser Asn Asn Ser  
 260 265 270

Phe Val Gly Glu Val Pro Arg Ser Leu Ile Arg Leu Met Asp Leu Thr  
 275 280 285

Thr Val Gly Thr Ser Pro Gly Ile Ala Leu Ser Asn Leu Pro Leu Tyr  
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290

295

300

Val Asn His Asn Arg Arg Thr Leu Asp Glu Gln Pro Asn Thr Ile Thr  
305 310 315 320

Gly Thr Asn Asn Thr Val Arg Ser Gly Arg Asn Asn Thr Met Ser Gly  
325 330 335

Asn Asp Asn Thr Val Met Ser Gly Asp Asn Asn Ala Val Ser Gly Ser  
340 345 350

Phe Asn Thr Leu Val Cys Gly Asp Asn Asn Val Leu Thr Gly Asp His  
355 360 365

His Val Val Ser Gly Ser Asn His Ile Val Thr Asn Ser Tyr Asn Lys  
370 375 380

Val Ser Gly Cys Thr Asn Asn Val Ser Gly Ser Asn His Thr Val Ser  
385 390 395 400

Gly Ser Asn Asn Thr Val Ser Gly Ser Ser Asn Thr Val Ser Gly Ser  
405 410 415

Asn His Ile Val Ser Gly Ser Asn Lys Ile Val Thr Gly Gly  
420 425 430

<210> 127  
<211> 1010  
<212> PRT  
<213> Oryza sativa

<400> 127

Met Ala Arg Arg Ala Pro Leu Arg Cys Leu Phe Leu Ser Leu Val Ala  
1 5 10 15

Leu Phe Ala Leu Leu Pro Phe Pro Pro Ala Ala Ala Ala Pro Cys His  
20 25 30

Pro Glu Asp Leu Leu Ala Leu Arg Ala Phe Ala Gly Asn Leu Ser Ala  
35 40 45

Gly Gly Gly Gly Ala Gly Leu Arg Ala Ala Trp Ser Gly Asp Ala Cys  
50 55 60

Cys Ala Trp Asp Gly Val Ala Cys Asp Ala Ala Ala Arg Val Thr Ala  
65 70 75 80

Leu Arg Leu Pro Gly Arg Gly Leu Glu Gly Pro Ile Pro Pro Ser Leu  
85 90 95

Ala Ala Leu Ala Arg Leu Gln Asp Leu Asp Leu Ser His Asn Ala Leu  
100 105 110

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Thr Gly Gly Ile Ser Ala Leu Leu Ala Ala Val Ser Leu Arg Thr Ala  
 115 120 125  
 Asn Leu Ser Ser Asn Leu Leu Asn Asp Thr Leu Leu Asp Leu Ala Ala  
 130 135 140  
 Leu Pro His Leu Ser Ala Phe Asn Ala Ser Asn Asn Ser Leu Ser Gly  
 145 150 155 160  
 Ala Leu Ala Pro Asp Leu Cys Ala Gly Ala Pro Ala Leu Arg Val Leu  
 165 170 175  
 Asp Leu Ser Ala Asn Leu Leu Ala Gly Thr Leu Ser Pro Ser Pro Ser  
 180 185 190  
 Pro Pro Pro Cys Ala Ala Thr Leu Gln Glu Leu Tyr Leu Ala Ser Asn  
 195 200 205  
 Ser Phe His Gly Ala Leu Pro Pro Thr Leu Phe Gly Leu Ala Ala Leu  
 210 215 220  
 Gln Lys Leu Ser Leu Ala Ser Asn Gly Leu Thr Gly Gln Val Ser Ser  
 225 230 235 240  
 Arg Leu Arg Gly Leu Thr Asn Leu Thr Ser Leu Asp Leu Ser Val Asn  
 245 250 255  
 Arg Phe Thr Gly His Leu Pro Asp Val Phe Ala Asp Leu Thr Ser Leu  
 260 265 270  
 Gln His Leu Thr Ala His Ser Asn Gly Phe Ser Gly Leu Leu Pro Arg  
 275 280 285  
 Ser Leu Ser Ser Leu Ser Ser Leu Arg Asp Leu Asn Leu Arg Asn Asn  
 290 295 300  
 Ser Phe Ser Gly Pro Ile Ala Arg Val Asn Phe Ser Ser Met Pro Phe  
 305 310 315 320  
 Leu Val Ser Ile Asp Leu Ala Thr Asn His Leu Asn Gly Ser Leu Pro  
 325 330 335  
 Leu Ser Leu Ala Asp Cys Gly Asp Leu Lys Ser Leu Ser Ile Ala Lys  
 340 345 350  
 Asn Ser Leu Thr Gly Gln Leu Pro Glu Glu Tyr Gly Arg Leu Gly Ser  
 355 360 365  
 Leu Ser Val Leu Ser Leu Ser Asn Asn Thr Met Arg Asn Ile Ser Gly  
 370 375 380

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Ala Leu Thr Val Leu Arg Ala Cys Lys Asn Leu Thr Thr Leu Ile Leu  
385 390 395 400

Thr Lys Asn Phe Val Gly Glu Asp Leu Pro Asp Asp Gly Ile Ala Gly  
405 410 415

Phe Asp Asn Leu Glu Val Leu Ala Leu Gly Asp Cys Ala Leu Arg Gly  
420 425 430

Arg Val Pro Glu Trp Leu His Gln Cys Lys Arg Leu Glu Val Leu Asp  
435 440 445

Leu Ser Trp Asn Gln Leu Val Gly Thr Ile Pro Glu Trp Ile Gly Gln  
450 455 460

Leu Asp Asn Leu Thr Tyr Leu Asp Leu Ser Asn Asn Ser Leu Val Gly  
465 470 475 480

Glu Ile Pro Lys Ser Leu Thr Gln Leu Lys Ser Leu Val Thr Ala Arg  
485 490 495

Arg Ser Pro Gly Met Ala Phe Thr Asn Met Pro Leu Tyr Val Lys His  
500 505 510

Asn Lys Ser Thr Ser Gly Arg Gln Tyr Asn Gln Leu Ser Asn Phe Pro  
515 520 525

Pro Ser Leu Phe Leu Asn Asp Asn Gly Leu Asn Gly Thr Ile Trp Pro  
530 535 540

Glu Phe Gly Asn Leu Lys Glu Leu His Val Leu Asp Leu Ser Asn Asn  
545 550 555 560

Ala Ile Ser Gly Ser Ile Pro Asp Val Leu Ser Arg Met Glu Asn Leu  
565 570 575

Glu Val Leu Asp Leu Ser Ser Asn Asn Leu Ser Gly Ser Ile Pro Ser  
580 585 590

Ser Leu Thr Asp Leu Thr Phe Leu Ser Lys Phe Ser Val Ala His Asn  
595 600 605

His Leu Val Gly Pro Ile Pro Asn Gly Gly Gln Phe Phe Thr Phe Ser  
610 615 620

Asn Ser Ser Phe Glu Gly Asn Pro Gly Leu Cys Arg Ser Ser Ser Cys  
625 630 635 640

Asp Gln Asn Gln Pro Gly Glu Thr Pro Thr Asp Asn Asp Ile Gln Arg  
645 650 655

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Ser Gly Arg Asn Arg Lys Asn Lys Ile Leu Gly Val Ala Ile Cys Ile  
 660 665 670  
 Gly Leu Val Leu Val Val Leu Leu Ala Val Ile Leu Val Asn Ile Ser  
 675 680 685  
 Lys Arg Glu Val Ser Ile Ile Asp Asp Glu Glu Ile Asn Gly Ser Cys  
 690 695 700  
 His Asp Ser Tyr Asp Tyr Trp Lys Pro Val Leu Phe Phe Gln Asp Ser  
 705 710 715 720  
 Ala Lys Glu Leu Thr Val Ser Asp Leu Ile Lys Ser Thr Asn Asn Phe  
 725 730 735  
 Asp Gln Ala Asn Ile Ile Gly Cys Gly Gly Phe Gly Leu Val Tyr Lys  
 740 745 750  
 Ala Tyr Leu Pro Asp Gly Thr Lys Ala Ala Val Lys Arg Leu Ser Gly  
 755 760 765  
 Asp Cys Gly Gln Met Glu Arg Glu Phe Arg Ala Glu Val Glu Ala Leu  
 770 775 780  
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